

WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device, comprising the steps of:

dividing a laser beam from a pulse oscillation type solid laser as a light  
5 source into a plurality of laser beams;

changing an optical path length of at least one laser beam of the plurality  
of laser beams; and

synthesizing the plurality of laser beams to irradiate a semiconductor  
film.

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2. A method according to claim 1, wherein the laser beam is divided into an s-  
component and a p-component to form the plurality of laser beams.

3. A method according to claim 1, wherein an output time of the laser beam is  
15 1 to 50 ns.

4. A method according to claim 1, wherein the pulse oscillation type solid laser  
is one selected from the group consisting of a YAG laser, a YVO<sub>4</sub> laser, a YLF laser,  
a YAlO<sub>3</sub> laser, a glass laser, a ruby laser, an alexandrite laser, and a Ti:sapphire  
20 laser.

5. A method according to claim 1, wherein the semiconductor film is a film  
containing silicon.

25 6. A method according to claim 1, wherein said semiconductor device comprises

at least one electric equipment selected from the group consisting of a video camera.  
a digital camera, a digital camera, a projector, a head-mounted display, a goggle type  
display, a car navigation system, a car stereo, a personal computer, a mobile  
information terminal, a mobile computer, a mobile telephone, and an electronic  
5 book.

7. A method of manufacturing a semiconductor device, comprising the steps  
of:

changing an optical path length of at least one laser beam of a plurality of  
10 laser beams from a plurality of pulse oscillation type solid lasers as light sources:  
and

synthesizing the plurality of laser beams to irradiate a semiconductor  
film.

15 8. A method according to claim 7, wherein an output time of the laser beam is  
1 to 50 ns.

9. A method according to claim 7, wherein the pulse oscillation type solid laser  
is one selected from the group consisting of a YAG laser, a YVO<sub>4</sub> laser, a YLF laser,  
20 a YAlO<sub>3</sub> laser, a glass laser, a ruby laser, an alexandrite laser, and a Ti:sapphire  
laser.

10. A method according to claim 7, wherein the semiconductor film is a film  
containing silicon.

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11. A method according to claim 7, wherein said semiconductor device comprises at least one electric equipment selected from the group consisting of a video camera, a digital camera, a digital camera, a projector, a head-mounted display, a goggle type display, a car navigation system, a car stereo, a personal computer, a  
5 mobile information terminal, a mobile computer, a mobile telephone, and an electronic book.

12. A method of manufacturing a semiconductor device, comprising the steps of:

10 oscillating a first laser beam from at least one pulse oscillation type solid laser of a plurality of pulse oscillation type solid lasers;

oscillating a second laser beam from another pulse oscillation type solid laser; and

15 synthesizing the first laser beam and the second laser beam to irradiate a semiconductor film.

13. A method according to claim 12, wherein an output time of the first laser beam or the second laser beam is 1 to 50 ns.

20 14. A method according to claim 12, wherein the pulse oscillation type solid laser is one selected from the group consisting of a YAG laser, a  $\text{YVO}_4$  laser, a YLF laser, a  $\text{YAlO}_3$  laser, a glass laser, a ruby laser, an alexandrite laser, and a Ti:sapphire laser.

25 15. A method according to claim 12, wherein the semiconductor film is a film

containing silicon.

16. A method according to claim 12, wherein said semiconductor device comprises at least one electric equipment selected from the group consisting of a video  
5 camera, a digital camera, a digital camera, a projector, a head-mounted display, a  
goggle type display, a car navigation system, a car stereo, a personal computer, a  
mobile information terminal, a mobile computer, a mobile telephone, and an electronic  
book.

10 17. A method of manufacturing a semiconductor device, comprising the steps  
of:

oscillating a first laser beam from at least one pulse oscillation type solid  
laser of a plurality of pulse oscillation type solid lasers;

oscillating a second laser beam from another pulse oscillation type solid  
15 laser;

changing an optical path length of at least one of the first laser beam and  
the second laser beam; and

synthesizing the first laser beam and the second laser beam to irradiate a  
semiconductor film.

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18. A method according to claim 17, wherein an output time of the first laser  
beam or the second laser beam is 1 to 50 ns.

19. A method according to claim 17, wherein the pulse oscillation type solid  
25 laser is one selected from the group consisting of a YAG laser, a  $\text{YVO}_4$  laser, a YLF

laser, a  $\text{YAlO}_3$  laser, a glass laser, a ruby laser, an alexandrite laser, and a Ti:sapphire laser.

20. A method according to claim 17, wherein the semiconductor film is a film  
5 containing silicon.

21. A method according to claim 17, wherein said semiconductor device  
comprises at least one electric equipment selected from the group consisting of a video  
camera, a digital camera, a digital camera, a projector, a head-mounted display, a  
10 goggle type display, a car navigation system, a car stereo, a personal computer, a  
mobile information terminal, a mobile computer, a mobile telephone, and an electronic  
book.